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QUARTERLY INDUSTRY REPORT

3 Magazine Publishing Shows New Growth

8 Forecasting Sales of Textbooks

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PERIODICAL PACE IS STRONG, STEADY AND DIVERSIFIED

By Rose Marie Bratland

Despite rises in production costs and postal rates, the periodical industry is experiencing continued growth. Rising advertising expenditures, a broadened scope of leisure time interests, specialized information needs of the business community and higher levels of educational attainment largely account for the general well-being of the industry.

Periodical Industry Defined

The periodicals industry, Standard Industrial Classification (SIC) 2721, includes establishments primarily engaged in publishing periodicals, or in preparing, publishing and printing periodicals. These establishments carry on the various operations necessary for issuing periodicals, but may or may not do their own printing. Establishments not engaged in publishing periodicals, but which print periodicals for publishers are classified in the commercial printing industries, SIC 275.

Receipts Up; Employment Down

The preliminary report of the 1972 Census of Manufactures reports receipts for the periodicals industry at $3.5 billion, a gain of 13% over 1967 receipts of $3.1 billion and up 53% over the 1963 level. Over this 9-year span receipts rose at an average annual rate of 4.8% (see table 1).

Employment fell off 16%, going from 79,100 in 1967 to 66,400 in 1972. Industry employment levels are largely dependent on the volume of advertising revenue which hit a plateau in the early 1970's. Following a similar pattern, production workers totalled 14,500 in 1967, but by 1972 dropped to 10,900, a decline of 25%. Production workers accounted for 16% of total employment compared to 18% in 1963 and 1967.

While employment declined, total wages for the industry increased 12% in the 1967-72 period, amounting to $84 million. On a per employee basis, average annual wages totalled $10,646 in 1972, up 33% over the 1967 value of $8,011. Compared to this, the value added per employee stood at $31,565 in 1972, a 34% increase over the 1967 per capita figure. Average hourly wages for production workers rose 25% between 1967 and 1972, going from $3.19 to $4.00.

The decline in employment and the notable gains in value added per employee were accompanied by large outlays for capital expenditures during the 1967-72 span. In 1967 capital expenditures per employee amounted to $733; by 1972 these stood at $827, in line with the sizable outlays recorded in the intervening years.

Product Data Reveals Mixed Growth

Product receipts, amounting to $3.2 billion in 1972, showed a 19% gain over the 1967 level. Data on periodical receipts by individual product categories are shown in table 2.

The Bureau of the Census classifies periodicals into four broad product categories. In 1972, general interest magazines constituted the largest group with 54% of total product receipts, followed by business magazines with 28%. The third group, other periodicals, which includes religious magazines, comic and magazine supplements for Sunday newspapers, and other periodicals such as children's and youth magazines, house organs, fraternal and club periodicals, accounted for 9%. Farm periodicals was the smallest group with 2% of the total. Periodicals which are not specified by kind in the Census report made up the remaining 7%. Since 1967, both general interest periodicals and miscellaneous periodicals have experienced declines in their

Table 1.—Selected General Statistics for Periodicals, 1963, 1967, and 1972

Item	1972	1967	1963	Percent change 1967-72	Average annual rate of change, 1963-72 (percent)
Establishments (number)	2,510	2,510	2,630	....	....
Employment (000)	66.4	79.1	67.7	−16.1	−0.2
Payroll ($ million)	706.9	633.7	461.1	11.6	4.9
Production workers (000)	10.9	14.5	12.3	−24.8	−1.4
Man-hours (million)	21.1	25.2	22.1	−16.3	−0.5
Workers wages ($ million)	84.4	80.5	65.6	4.8	2.8
Value added by manufacturer ($ million)	2,095.9	1,868.7	1,349.0	12.2	5.0
Value of receipts ($ million)	3,506.3	3,095.9	2,295.7	13.3	4.8
Wages per employee ($)	10,646	8,011	6,811	32.9	5.1
Value added per employee ($)	31,565	23,625	19,926	33.6	5.2
Hourly wage rate ($)	4.00	3.19	2.97	25.4	3.4
Capital expenditures per employee ($)	827	733	499	....	....

....–Not applicable.

Source: U.S. Department of Commerce, Bureau of the Census.

Table 2.—Periodical Product Receipts, 1963-72

[in million dollars]

SIC product code		1972	1967	1963	Percent change 1967-72	Average annual rate of change 1963-72 (percent)
2721 --	Periodicals, total	$3,177.2	$2,668.2	$2,035.5	19.1	5.1
27211 --	Farm periodicals: Receipts from subscriptions and sales	14.2	11.3	8.5	25.7	5.9
27211 12	General	10.3	9.2	6.6	12.0	5.1
27211 16	Specialized	3.9	2.1	1.8	85.7	9.0
27212 --	Farm periodicals: Receipts from advertising	61.6	45.7	45.6	34.8	3.4
27212 11	General	38.4	31.9	36.5	20.4	0.6
27212 15	Specialized	22.8	13.8	9.0	65.2	10.9
27213 --	Specialized business and professional periodicals: Receipts from subscriptions and sales	259.9	149.6	122.7	73.7	8.7
27213 07	Industrial, engineering, and technical	78.9	44.8	30.9	76.1	11.0
27213 13	Merchandising	81.1	24.3	20.3	233.7	16.6
27213 17	Professional, institutional, and service	96.1	72.2	56.1	33.1	6.2
27213 00	Specialized business and professional: Receipts from subscriptions and sales, n.s.k.	3.8	8.3	15.3	-54.3	-14.3
27214 --	Specialized business and professional periodicals: Receipts for advertising	639.8	524.9	412.7	21.9	5.0
27214 11	Industrial, engineering, and technical	275.8	307.9	216.5	-10.4	2.7
27214 13	Merchandising	210.1	120.7	106.4	74.1	7.9
27214 15	Professional, institutional, and service	150.8	87.2	65.2	72.9	9.8
27214 00	Specialized business and professional: Receipts from advertising, n.s.k.	3.1	9.1	24.5	-65.9	-20.6
27215 --	General periodicals: Receipts from subscriptions and sales	823.2	593.5	456.7	38.7	6.8
27215 14	Comics	17.9	8.5	10.9	110.5	5.7
	Women and home services:					
27215 43	Subscription sales	82.6	63.4	59.7	38.4	3.7
27215 45	Single copy sales	110.7	53.8	52.6	105.8	8.6
	General interest and entertainment					
27215 53	Subscription sales	284.3	231.8	181.0	22.6	5.1
27215 55	Single copy sales	193.5	158.2	98.1	22.3	7.8
	General news:					
27215 63	Subscription sales	94.6	47.6	29.1	98.7	14.0
27215 65	Single copy sales	16.2	10.8	5.9	50.0	11.9
27215 74	Business news: Subscription sales and single copy sales	21.3	15.0	12.8	42.0	5.8
27215 00	General: Receipts from subscription and sales, n.s.k.	2.1	4.4	6.6	-52.3	-12.0
27216 --	General periodicals: Receipts from advertising	892.6	879.5	710.6	1.5	2.6
27216 13	Comics	(D)	0.4	0.5	....	....
27216 43	Women and home services	294.6	245.0	203.7	20.2	4.2
27216 53	General interest and entertainment	371.3	457.3	380.2	-18.8	-0.3
27216 63	General news	212.0	145.8	105.8	45.4	8.0
27216 73	Business news	12.4	24.9	15.2	-50.2	-2.2
27216 00	General: Receipts from advertising, n.s.k.	(D)	6.1	5.2	....	....
27217 00	Other periodicals	279.0	284.2	230.2	-1.8	2.2
	Religious:					
27217 03	Subscription and single-copy sales	88.9	69.0	65.7	28.8	3.4
27217 33	Receipts from advertising	12.7	12.9	6.2	-1.6	8.3
	Magazine and comic supplements for Sunday news papers:					
27217 05	Subscription and single copy sales	9.3	21.0	26.0	-55.7	-10.8
27217 35	Receipts from advertising	37.1	47.5	41.3	-21.9	-1.2
	Periodicals, n.e.c.:					
27217 07	Subscription sales	79.0	71.6	7.9	10.3	31.0
27217 08	Single copy sales	9.2	14.1		-34.8	
27217 37	Advertising receipts	37.1	36.4	25.1	1.9	4.4
27217 00	Other periodicals, n.s.k.	5.7	11.7	4.3	-51.3	3.2
27210 00	Periodicals, n.s.k., for companies with 10 employees or more[1]	66.9	88.4	48.5	24.3	17.5
27210 02	Periodicals, n.s.k., for companies with less than 10 employees[1]	140.0	91.1		53.7	

[1] In the Census of manufactures, data for establishments of small companies, typically those with less than 10 employees, were estimated from administrative records rather than collected from respondents. These estimated shipments are included in the code ending "002". In addition to the "n.s.k." (code 002), products which were not completely identified on the standard forms were coded to the appropriate product class (5 digits) followed by "00" or in some cases to the appropriate product class code (4 digits) followed by "000".

(D)—Withheld to avoid disclosing figures for individual companies.
n.s.k.—Not specified by kind.

Source: U.S. Department of Commerce, Bureau of the Census.

shares of the total market, while the business periodicals sector has increased its share.

In addition to the Census designation by subject categories, periodical receipts are also reported by source, whether from advertising or circulation. In respect to the four major groups, advertising revenues constituted essentially the same proportion of receipts in 1963 and 1967 providing 63% of the total while circulation contributed 37%. However, in 1972 advertising revenues accounted for 57% of total receipts and circulation represented 43%. In the individual product groups, the percentage distribution for these two sources of revenue showed considerable disparity from these averages. Advertising supplied the major part of the revenues for farm, business and general interest periodicals in 1972, accounting for 81%, 71% and 52% of their revenues, respectively. Only 31% of revenues for periodicals in the miscellaneous group were attributable to advertising. In addition to religious periodicals and Sunday supplements, periodicals in this category include children's and youth magazines, house organs, fraternity and club periodicals and others of this type which carry little or no advertising.

Of the major product groups, farm periodicals experienced the largest percentage gain in advertising receipts with a 35% increase over the 1967 level which brought advertising receipts up to $62 million in 1972. Specialized business and professional periodicals recorded a 22% increase, with receipts of $640 million, while general interest periodicals sustained a 2% rise, with receipts totaling $893 million in 1972. Advertising receipts for the miscellaneous publishing group declined 10%. Looking at individual product lines within each group during the 1967-72 period, substantial increases in advertising revenues were reported for business merchandising magazines, up 74%, professional, institutional and service periodicals, up 73%, and specialized farm magazines, up 65%.

With respect to circulation receipts, the largest percentage gain for any major group was registered by specialized business and professional periodicals which led the way with a 74% increase, and receipts of $260 million. Circulation receipts for general interest magazines, at $823 million, were up 38% over the 1967 level. Receipts for farm periodicals gained by 25%, while the miscellaneous group receipts rose only 6%. Notable advances by individual product lines were reported for business merchandising magazines, up 234%, comics, up 111%, general news magazines, up 90%, and specialized farm periodicals up 86%.

Of additional significance, in the general interest periodical sector circulation figures are given for both subscription and single copy sales. Under this grouping, women and home services periodicals doubled their single copy sales in the 1967-72 span and surpassed the value of subscription sales which had led in 1967. During the same period, subscription sale receipts for general news magazines nearly doubled in value, while its single copy receipts rose 50%.

Patterns of Industry Concentration and Regional Growth

Of the 2,510 establishments reporting in 1972, nearly 18% had fewer than 20 employees, the same ratio as in 1967. While no change in the number of establishments occurred in the 1967-72 period, a drop of 110 establishments was reported in the 1963-67 span.

As seen in table 3, the largest number of periodical establishments were located in the Northeast Region which had 904 in 1972. In second place was the North Central Region with 656, followed by the South Region and the West Region which were the only regions showing any overall growth in number of establishments since 1963. However, among the divisions in these regions, the New England Division showed the largest gain, adding 44 plants during this period; close behind was the South Atlantic Division with 43.

As would be expected, the Northeast Region also led in total employment, with over 34,000 employees, 11% of these were production workers. However, the North Central Region reported the greatest number of production workers, 4, 300 which accounted for 25% of its 17,400 employees. This higher ratio of production workers to total employment in the North Central Region may indicate a greater concentration of establishments performing both printing and publishing activities than in other regions.

Value added per employee for the regions, except for the Northeast, was nearly the same in 1972, but regional rates of growth showned some disparity over the 1963-72 span. The Northeast Region recorded the highest dollar value and dollar gain with nearly $39,000 in value added per employee, up 60%—$14,000 above the 1963 level. Both the North Central and West Regions showed value added per employee at $25,000 in 1972 for gains of 71% and 80% respectively. Productivity in the South stood at $23,000, having increased 67% since 1963.

Magazine Publishing Growth by Printing Process

Magazine printing and publishing are inherently tied together. A substantial amount of periodical printing is done by commercial printing establishments that specialize in magazine printing but also take in other printing jobs. Table 4 shows magazine and periodical printing by printing process, which is found as a separate product item in each of the commercial printing industries (SIC 2751, 2752 and 2754).

In 1972 magazine printing by all printing processes totalled slightly over a billion dollars, 26% above the 1967 level of $797 million. In 1967, 58% of the total was by letterpress; by 1972 letterpress accounted for 37%, and receipts had dropped 20%.

Lithography accounted for 35% of total magazine printing in 1967; in 1972 it took the lead over letterpress, cornering 52% of total magazine printing, raising its receipts 86% above the 1967 level. Web-offset, the fastest growing segment of lithography, was up 96% over the 1967 level and accounted for 68% of lithographic receipts in 1972. Over the 1963-72 span, lithographic printing of periodicals showed an annual growth rate of 16%.

The gravure process made inroads into the magazine printing market, doubling its receipts between 1967 and 1972 and capturing 12% of the total in 1972 compared to 8% in 1967. This process posted a 9% average annual rate of growth for the period 1963-72.

Summary

The periodicals industry is in good health and is more than maintaining its overall strength, despite the demise of a number of notable magazines in recent years. A sizeable increase in the revenues for the industry have come from subscription and single copy sales. Largely accounting for industry growth has been the increasing number of special interest publications that serve the

needs and activities of more diversified segments of the population. While over the past several years, the industry has experienced a steady upswing, problems resulting from material shortages and rising production costs and postal rates have plagued the industry.

The final report of the 1972 Census of Manufactures industry series MC 72(2)-27A, which includes periodicals, is scheduled for release. Copies may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Table 3.—Selected General Statistics, by Geographic Areas for Periodicals, 1963-72

	Establishments (number)	All employees		Production workers		Value added by manufacture		Value of industry receipts (million dollars)
		Number (1,000)	Payroll (million dollars)	Number (1,000)	Wages (million dollars)	By manufacture (million dollars)	Per employee (thousand dollars)	
United States, total								
1972	2,510	66.4	706.9	10.9	84.4	2,095.9	31.6	3,506.3
1967	2,510	79.1	633.7	14.5	80.5	1,868.7	23.6	3,095.9
1963	2,630	67.7	461.1	12.3	65.6	1,349.0	19.9	2,295.7
Northeast Region:								
1972	904	34.1	401.7	3.7	32.5	1,316.1	38.6	2,223.4
1967	929	45.9	390.9	5.8	32.0	1,241.9	27.1	2,154.5
1963	988	38.9	284.7	5.2	27.6	942.3	24.2	1,685.6
New England Division:								
1972	172	2.9	28.8	.5	3.3	78.2	27.0	164.2
1967	147	2.5	17.1	.3	1.3	39.4	15.8	98.7
1963	128	2.3	12.8	.2	.8	26.8	11.7	66.7
Middle Atlantic Division:								
1972	732	31.2	372.9	3.3	29.2	1,237.9	39.7	2,059.1
1967	782	43.4	373.8	5.5	30.7	1,202.4	27.7	2,055.8
1963	860	36.6	271.8	5.0	26.8	915.4	25.0	1,618.9
North Central Region:								
1972	656	17.4	166.8	4.3	33.2	427.2	24.6	708.7
1967	695	20.6	152.2	6.0	36.1	391.6	19.0	576.5
1963	737	17.5	107.6	4.9	27.7	252.1	14.4	367.3
East North Central Division:								
1972	467	11.5	114.1	2.5	20.4	316.1	27.5	481.7
1967	496	13.5	103.9	3.0	16.3	265.3	19.7	393.4
1963	518	10.6	69.5	2.2	12.0	165.3	15.6	240.2
West North Central Division:								
1972	189	6.0	52.6	1.9	12.9	111.1	18.5	227.0
1967	199	7.0	48.3	3.0	19.9	126.3	18.0	183.1
1963	209	6.9	38.1	2.8	15.8	86.8	12.6	127.1
South Region:								
1972	528	10.0	91.0	1.8	11.4	230.0	23.0	363.2
1967	508	8.5	62.3	1.6	6.6	154.2	18.1	244.2
1963	493	7.7	48.4	1.2	5.4	105.9	13.8	169.2
South Altantic Division:								
1972	298	6.1	62.6	.6	4.6	165.2	27.1	270.5
1967	266	5.4	44.0	.6	2.2	114.9	21.3	181.1
1963	255	4.8	34.5	.3	1.7	75.1	15.6	121.2
East South Central Division:								
1972	73	2.6	17.4	.7	3.7	37.0	14.2	53.1
1967	76	2.0	10.5	.6	2.2	21.4	10.7	36.2
1963	79	1.9	8.2	.5	2.0	15.7	8.3	27.1
West South Central Division:								
1972	157	1.3	11.1	.5	3.0	27.8	21.4	39.6
1967	166	1.1	7.8	.5	2.2	17.9	16.3	26.9
1963	162	1.0	5.8	.3	1.7	15.1	15.1	20.9
West Region:								
1972	422	4.9	47.4	1.1	7.2	122.7	25.0	211.1
1967	378	4.1	28.4	1.1	5.7	81.1	19.8	120.8
1963	419	3.5	20.4	1.0	4.8	48.8	13.9	73.5
Mountain Division:								
1972	74	.8	6.5	.3	2.0	19.5	24.4	27.5
1967	69	1.0	6.0	.3	1.9	19.0	19.0	24.5
1963	78	1.0	5.3	.5	2.1	13.3	13.3	17.3
Pacific Division:								
1972	348	4.1	40.9	.8	5.2	103.2	25.2	183.6
1967	309	3.1	22.4	.8	3.8	62.2	20.1	96.2
1963	341	2.5	15.1	.5	2.7	35.4	14.2	56.3

Source: U.S. Department of Commerce, Bureau of the Census.

Table 4.—Value of Product Receipts for Magazine and Periodical Printing, by Printing Process, 1963-72

1972 product code	Product	1972	1967	1963	Percent change 1967-72	Average annual rate of change 1963-72 (percent)
	Magazine and periodical printing, total[1]	1,004.1	796.6	720.1	26.0	3.8
27511 15	Letterpress	369.3	458.8	530.9	−19.5	−3.9
27521 12-14	Lithographic	516.7	278.1	136.1	85.8	16.0
27521 12	Sheet-fed	163.9	98.5	136.1	66.4	16.0
27521 14	Web-fed	352.8	179.6		96.4	
27541 33	Gravure	118.1	59.7	53.1	97.8	9.3

[1] Excludes magazine and comic supplements for Sunday newspapers.

Source: U.S. Department of Commerce, Bureau of the Census.

REVISIONS TO U.S. INDUSTRIAL OUTLOOK 1975

The following revisions have been made to data in the book publishing and commercial printing sections of Outlook 1975:

Location	Revision
p. 292 – line 19	"Paperback textbook sales . . . amount to $173 million."
p. 292 – line 20	"The value of general adult trade books . . . exceed $395 million."
p. 292 – line 23	"Hardbound textbooks . . . over $265 million."
p. 296 – table	"Production workers in 1971 totaled 260,500."

The *U.S. Industrial Outlook 1975* is priced at $5 and may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

DEVELOPING AND EVALUATING THE FORECASTING ABILITY OF TEXTBOOK SALES REGRESSION EQUATIONS

By Elliot Levy

Summary

Selected data that could influence sales of elementary and high school textbooks were examined to determine their applicabliity in forecasting textbook demand at these school levels. Information was gathered for the time period 1954 to 1973, for both school levels. Annual time series were collected for: (1) the quantity of textbooks sold, (2) prices of textbooks, workbooks, and objective tests, (3) pupil enrollement, and (4) elementary-high school expenditures.

Of the sales and education factors considered for use as indicators for forecasting, the most significant ones were selected. They were: (1) prices of textbooks, (2) prices of workbooks, and (3) school enrollment. The number of textbooks sold would be expected to vary directly with enrollment and inversely with the prices of textbooks. In elementary schools, there exists the possibility that workbooks can be substituted for textbooks. Thus, if textbook prices rise relative to workbook prices, the number of textbooks sold is expected to decline.

The notable exception to the list of statistically significant indicators is public school expenditures. School expenditures do have a measurable influence on textbook sales but due to a lack of specific detail, expenditure significance cannot be determined. Public school expenditures data at the elementary and high school levels are combined and available only biennially.

Regression equations were applied for developing and testing results of annual forecasts of textbooks sales to elementary and secondary school levels.

Two methods of testing the forecasting ability of the regressions were employed. First, a separate regression was performed with all the data for 1954-69 except for the first year (1954). The resulting regression was then used to predict the first year. This procedure was repeated for the second year (1955) and so forth for each year in turn. Second, regressions were performed with data for all but the last few years of the data and these regressions then were used to forecast remaining years. Using this method, data for 1954-69 were fitted to regressions to forecast 1970-73.

In observing the results from past forecasts, certain tolerances can be established to judge the forecasting accuracy of the relationship. This approach was taken for both the above methods to test three forms of regression equations to forecast the quantities of textbooks sold to elementary and high schools. The three are: (1) equations containing original data; that is, data unadjusted for trend, (2) equations containing detrended (adjusted) data plus an estimate for trend, and (3) equations projecting only trend. Of the three types of regression approaches examined, the relationship containing data not adjusted for trend showed the best forecasting results.

For the second testing method, the forecasts of the trial forecast period 1970-73, the relationship containing the original data again produced the best results. The results showed that it had the smallest degree of forecast error—within 2 standard deviations—in comparison to the other two regression approaches.

For the period under study, the number of elementary and high school textbooks sold grew on average by 4% and 6%, respectively. However, these average rates of growth cannot be assumed for sales in current and future periods. The results show that simple time trends forecast textbook sales with much larger error than do relationships between textbook sales, enrollement and textbook prices.

Presently, quantities of textbooks sold in the school market may be declining. At this time, the U.S. economy is facing rising prices in most commodity areas and school enrollments have not been rising at the pace demonstrated in the past decade.

Detailed statistical tables related to this study are at the end of the text.

Introduction

A need in book publishing is a sales forecasting model. By predicting sales for all book categories, an estimate of total sales of the book publishing industry can be forecast. A recent study of the book industry includes suggestions of variables to pursue in predicting the future demand for books.[1]

In order to forecast the sales of school textbooks, prices, school enrollment and school budgets are considered important factors. Prices of textbooks vary inversely with the quantity of textbooks. Thus, with a drop in prices, schools tend to increase their textbook inventories, and during a period of rising prices, schools purchase fewer textbooks. Enrollments vary directly with textbook sales, i.e., the more students, the more books are needed. Also, expenditures for textbooks vary directly with textbook sales. The more financial resources that schools have, the more books they can purchase. However, when budgets are tightened, schools have to reduce textbook purchases. Thus budgets have a constraining influence upon textbook purchases.

From the interviews with industry personnel and examination of education data, detailed public information is limited. The statistics of total number, value and price per unit of textbooks sold included in *Bowker Annual of Elementary Trade and Book Information* of 1962-71 furnished the following information: (1) quantity of textbook sales and (2) prices of textbooks, workbooks and objective tests. This publication included data from 1954-69. The Association of American Publishers furnished this same data for 1970 and 1971. The statistics of enrollment in full time public elementary and secondary schools and expenditures for instruction in these schools were derived from a number of publications, such as *State School Systems*, published by the Office of Education, Health, Education and Welfare. HEW thus

[1] G.F. Boals, *An Economic Analysis of Book Publishing, Princeton University*, 1970 (Published by Xerox University Microfilms, Ann Arbor, Michigan, pp. 23-26.

furnished both (1) the enrollment and (2) the textbook expenditure information. Enrollment data was gathered from 1954-73 and biennial expenditure information from 1954 through 1969, the years not furnished being estimated for this analysis. A study of the quality of the data supplied was not made prior to using it as input into the equations. Quality of the data should not be inferred by the forecasting ability of the school textbook relationships developed from this study, which shows only *results* of forecasting from the data collected.

Development of Equations

Two linear multiple regression[2] relationships were developed to forecast the quantity of textbook sales, one for elementary and the other for secondary schools. The predicting variables were (1) prices of textbooks and workbooks, and (2) school enrollment. Other factors considered were objective test prices and school expenditures. All of these variables were assumed to influence the demand for textbooks.

A t ratio of 2 or greater was used to select the variables for each of these relationships. Generally, this ratio is used in regression analysis in order to determine whether or not a given variable is statistically significant.[3]

Because the data used in establishing the textbook forecasting relationships are time series, linear trends appeared to be the element common to all data. These trends produce high interrelationships in the variables (table 5). In order to avoid spurious t test results in selecting elementary and high school textbook sales factors, linear trends were removed from the data (table 6).

A stepwise regression procedure was used for selecting the variables. The variables were selected by a ranking procedure depending on their power in explaining a proportion of the variability in the dependent factor. The results from the stepwise process for selecting the variables to forecast sales of elementary school textbooks are shown below.

Textbook-Workbook Price Ratio and School Enrollment Selected Factors for Elementary School Textbook Sales Forecasting.

Variable	t Ratio	Result	Action
1. Price Ratio: $\frac{\text{Textbooks}}{\text{Workbooks}}$	−2.6	Significant	Selected
2. Elementary School Student Enrollment	+2.2	Significant	Selected
3. Price of Objective Tests	−1.3	Not Significant	Not Selected
4. Expenditure Ratio: $\frac{\text{Textbooks}}{\text{Instructional Staff}}$	−0.1	Not Significant	Not Selected

[2]The term regression in statistical analysis means to reduce the squared errors between actual and calculated data. However, in forecasting, regression equation are useful if the squared errors between actual and forecasted values are small. Squares are used because errors can be positive or negative.

[3]The ratio is a relationship of the slope value to the scatter about the slope. In multiple regression there are slope values for each independent variable (X) that is related to the dependent one (Y). A ratio of 2 or greater, i.e., the scatter half or less than half of the slope, means that a 5% risk has been assumed in determining each variable's importance in a given relationship, which is the 95% confidence interval of the normal distribution. Under the central limit theorum, the variables considered for both forecasting relationships approximate normal distributions. Variables selected had a ratio of ± 2.0 or better.

The variables that were found significant for high school textbook forecasting were: (1) the prices of textbooks, (2) the prices of workbooks, and (3) high school student enrollment. Their t ratios were greater than 2.0. Prices of objective tests and textbooks expenditures were not significant factors, or variables.

Thus, there is a three variable relationship to forecast the quantity of elementary school textbook sales and a four variable relationship for high school textbook sales. Because the ratio of textbook to workbook prices has shown negative changes in textbook sales to price changes, it was used in the elementary school relationship. The textbook price variable showed a positive change in textbook sales to price changes when it was used separately. Price changes and quantity of a commodity in a rational sense, should be inversely related.

Forecasting and Explanatory Equations

Even though certain relationships were used to forecast school textbooks, they are not equations that explain the structure of this market. For example, expenditures for textbooks are an important factor in forecasting textbook demand; however, the data input were not found to be statistically significant. Secondly, there are statistical requirements that must be satisfied if the equation is to be considered as a model.[4] Forecasting equations may not meet any of these requirements; however, it is possible that they may do the same or better job of forecasting as might be expected from a structural model.

Forecasting Methods

Three kinds of linear (straight-line) forecasting equations were developed from the forecasting relationship for each school level. They are: (1) multiple regression equations containing original data, (2) multiple regression equations containing detrended data, and (3) simple time trend equations.

Annual forecasts of the quantity of books sold were made for both the elementary and high school levels in two history periods. They are: (1) an early history period, 1954-69 and (2) a later period 1970-73. These forecasts were compared with actual sales in order to measure the forecast error.

Early History Period

Method

Tolerance ranges (acceptable amount of forecast error) were prepared from the early history forecast results to measure the accuracy of forecasts made during the later period

For the early history period, a series of linear multiple regression equations were obtained for the elementary school relationship:

> Quantity of Book Sales (dependent variable as a function of (Textbook Workbook Price Ratio, Student Enrollment independent variables).

The independent variable data from each omitted year was substituted in its corresponding equation in order to calculate a

[4]Robert Ferber, *Handbook of Marketing Research*, (New York: McGraw-Hill Book Company, 1974), pp. 2-403-2-405.

forecast for book sales. The sequence of one-year forecasts derived from this process assumes perfect knowledge of the independent variable information. Each of these one-year forecasts from the series was matched against its corresponding actual sales in order to derive the forecast error. An example of the process, citing two years from the 1954-69 period, is shown below. The same process was applied to derive the forecast errors from the high school relationship.

Form of Equation: $Y = a \pm b_1 X_1 \pm b_2 X_2$

Notation	Yearly Inputs 1960	1961
Y = Quantity of Textbooks (000)	72,648.00	75,835.00
a = Origin of Equation	16,750.12	18,434.81
b_1 = Price Ratio Predictor	−21,328.71	−22,013.85
X_1 = Price Ratio Data	2.90	2.79
b_2 = Enrollment Predictor	+4.14	+4.14
X_2 = Enrollment Data (000)	28,439.00	28,686.00

1960: $72,648 \approx 16,750.12 - 21,328.71\ (2.9) + 4.14\ (28,439)$
1961: $75,835 \approx 18,434.81 - 22,013.85\ (2.79) + 4.14\ (28,686)$

Note: Because of rounding predictors to two decimal places, the *approximation* sign is used to indicate differences between this example and results that were generated by computer.

	Units (000) Forecast	Actual	Difference	Percent Difference
1960	72,648	70,505	+ 2,143	+ 3.0
1961	75,835	76,760	−924	− 1.2

From these forecast errors an average error of forecast[5] was calculated for the history period for each method per school level. The smallest average error represents the distribution of the annual forecast errors that came closest to actual sales (tables 7 and 8).

Results

The best forecasting results in this history period were achieved by applying the multiple regression of the quantity of book sales related to the selected price and enrollment variables with data that were not adjusted for trend, as shown below.

[5]This error of forecast is an absolute average of the square root of the sum of squared errors, from a distribution of forecast errors, divided by the number of errors in the distribution. Because forecast errors below trend are negative, squared numbers are used in averaging.

Multiple Regression Relationships Containing Original (Unadjusted Data) Produce Lowest Average Forecast Error for History Period 1954-69

1. Average Error of Forecast (000 books)

Textbook Sales to—	Multi-Regression with Original Data Input	Multi-Regression with Detrended Data Input	Simple Regression on Time
Elementary Schools	2,217	2,901	3,598
High Schools	879	1,157	1,356

2. Average Error (Percent)

	Multi-Regression with Original Data Input	Multi-Regression with Detrended Data Input	Simple Regression on Time
Elementary Schools	2.7	3.6	4.2
High Schools	2.4	3.6	5.6

The best forecasting results may have appeared for the multi-regression on the unadjusted data because of the sequential pattern, i.e., autocorrelation, in the time series data of sales, prices and enrollments. Generally, regression forecasting is only a feasible procedure if the trend in the history period continues into the forecast period. As shown in the tables 7 and 8, the years of 1966 and 1967 have no forecast information reported. They were omitted because they departed from the trend in textbook sales. In 1965, schools received large budget appropriations which caused unusual fluctuations in textbook purchases for 1966 and 1967. Also, if these years were included, calculated tolerance limits would be wider.

Later History Period

The years 1970-73, the later history period, is a trial forecasting period. For this recent period, the aim is to determine which of the three regression approaches produced the best forecast, according to a tolerance limit. In testing the usefulness of regression techniques for forecasting textbook sales, comparisons of actual sales to forecast sales were made between these three approaches during the recent time period (1970-73) and were compared to the best forecasting approach of the earliest period (1954-69).

Method

The same sequential method of obtaining forecasts was used as in the earlier period. Estimates of the independent variables are needed to generate sales forecasts. Regression forecasting requires forecasts of independent variables when (1) time extrapolation is not used, and (2) when these variables are not lagged. However, in 1970-71, again perfect knowledge must be assumed since actual data instead of estimates were used. If forecasts of the independent variables were used, then errors of forecast would be larger than what was reported for the textbook sales.

In order to compare accuracy of the forecasts of textbooks that were generated in the more recent period with that of the earlier period, the forecasting results of the 1970-73 years were compared with the best results of the 1954-69 time span. The smallest average error of forecast in the earlier period was selected for the computation of tolerance ranges for evaluating the forecasts made during this latter period. Thus, the more accurate textbook forecasts of the recent period should vary within twice the size of the best average error. This is the tolerance range used in order to evaluate the forecasting results.

Results

If the forecast errors (table 9) were charted in terms of standard units of the smallest average forecast error of the earlier history period, the forecast errors can be observed within given tolerance ranges. These ranges are similar to those found in control charts employed in statistical quality control procedures.

The assumption made is that the tolerance levels of the forecast error correspond to a normal distribution of error. The greater is the confidence in the accuracy of the forecast, the greater the error that is tolerated. The larger the accepted limits of variability in the forecast error, the smaller the risk assumed for it to vary beyond these limits. Relationships of the normal distribution to tolerable error are shown below:

Normal Distribution (percent)			Tolerable Error	
			Textbook Sales (000 Books)	
Confidence	Risk	Standard Units	Elementary School	High School
68	34	±1	±2,217	± 879
95	5	±2	±4,438	±1,758
99	1	±3	±6,567	±2,637

For example, in accepting the 95% confidence interval as acceptable error the critical limits for the forecast error to vary would be no more than 4.4 million books for elementary textbook sales forecasts and 1.8 million for high school sales forecasts. Almost all of the forecasts of textbook sales to both school levels generated by the multiple regression with the original data approach have forecast errors falling within tolerable bounds. The other two regression approaches have errors falling outside of the critical limits of acceptable error. Thus forecasting by the multiple regression containing data without trends removed furnished the best results under the condition of the critical limits chosen for the 1970-73 time period.

Relationship to Textbook Industry

From the foregoing forecasts, it appears that the industry may continue to face declines in the rate of school textbook sales. There have been recent declines in school enrollment in the United States. Also, the current economic situation may have caused upward price reactions by textbook manufacturers.

The forecasting equations for the elementary school textbooks show an average increase in sales of roughly 3 million books per year for the time span of the study, 1954-73, accounting for a 4% growth (table 10). In the early history period, 1954-69, nearly the same rate of growth appears. However, in the trial forecast period, 1970-73, constant growth doesn't seem relevant. According to the forecast produced by the multiple regression equations, textbook sales have depicted a much slower growth than that of the earlier period. This is shown below:

Forecasting Results Indicate Sales in Recent Period Falling for Elementary School Textbooks

	Rates of Growth in Elementary Textbook Sales (000)		
	Multiple Regression		Simple Regression
Time Period	With Trend	Detrended	on Time
1954-73	4%	4%	4%
1954-69	4%	4%	4%
1970-73	1%	3%	4%

The multiple regression equations produced better forecasting results than those results produced by regression on the time trend. Also, the best forecasting equation was the one that produced the lowest growth rate in textbook sales to elementary schools during the trial forecast period.

The equations that have forecast the number of books sold to high schools show almost similar results in that a constant growth pattern may not be applicable to the current trend in sales for this industry. As shown in tables 10 and 11, high schools have been estimated to have a greater relative increase in past sales than elementary schools. However, the number of books sold to high schools in later years were forecast as showing declines in the change in sales by the multiple regression equations using the price and enrollment factors.

These equations produced better results of the number of textbooks sold to high schools than the simple regression on time. The best forecasting procedure, multi-regression using original data (with trend) showed a one percent average drop in the number of books sold to high schools during the trial forecast period.

Forecasting Results Indicate Almost No Growth in Recent Period of High School Textbook Sales

	Rates of Growth in High School Textbook Sales		
	Multiple Regression		Simple Regression
Time Period	With Trend	Detrended	on Time
1954-73	6%	6%	7%
1954-69	8%	8%	8%
1970-73	−1%	0*	4%

*Less than 0.6%.

Limitations

This study contains the following limitations:

1. Public school textbook expenditures were not reported separately by elementary school and high schools. Combined expenditures for both school levels were used. Significance tests indicate that these expenditure data were not an important input.

2. The expenditure data are reported by the Office of Education on a biennial basis. The intervening years have been interpolated. Because most school systems purchase textbooks on an annual basis, a budget or expenditure variable would be reasonable input in making annual forecasts of school textbook sales.

3. Actual sales and unit price information supplied by the Association of American Publishers was not available for the entire textbook market beyond 1971. Thus annual information for 1972 and 1973 was interpolated.

Conclusion

This study indicates that prices of textbooks and workbooks plus pupil enrollments tend to be predicting variables for annual forecasts of sales of the number of textbooks to elementary and high schools. The study further shows that constant annual patterns of growth have not prevailed in the textbook market, assuming reasonable estimates were derived from the forecasting relationships including these variables as input. Thus, an average amount of growth produced by regressing on time alone may be misleading as an indicator for determining an average annual change in sales.

Furthermore, regression approaches used in making forecasts of school textbook sales were evaluated in terms of their ability to predict, within tolerable range of error, to demonstrate their utility as a tool in making forecasts for the book publishing industry.

Table 5.–Correlations of the Quantity of Textbook Sales Highly Intercorrelated With Other Factors by Nature of a Linear Time Trend

	Correlation Matrices													
	1. Elementary School Sales							2. High School Sales						
	QTB	PTB	PWB	POBT	EE	XTB	T	QTB	PTB	PWB	POBT	HE	XTB	T
QTB.....	1.00							1.00						
PTB.....	0.97	1.00						0.94	1.00					
PWB.....	0.97	0.99	1.00					0.96	0.92	1.00				
POBT.....	0.95	0.97	0.98	1.00				0.72	0.60	0.61	1.00			
EE.....	0.98	0.98	0.96	0.93	1.00			1.00	0.95	0.97	0.72	1.00		
XTB.....	0.98	0.97	0.95	0.93	0.99	1.00		0.97	0.98	0.93	0.73	0.98	1.00	
T.....	0.97	0.97	0.94	0.92	1.00	0.99	1.00	0.99	0.97	0.97	0.71	0.99	0.99	1.00

Notation

QTB = Quantity of Textbooks Sold (000 books)
PTB = Unit Price of Textbooks
PWB = Unit Price of Workbooks
POBT = Unit Price of Objective Tests
EE = Elementary School Student Enrollment (000)
HE = High School Student Enrollment (000)
XTB = Public School Expenditures of Textbooks (000$), includes both Elementary and Secondary Schools
T = Time

Source: Bureau of Domestic Commerce.

Table 6.—Intercorrelation Reduced by Removal of Linear Time Trend

	Correlation Matrices												
			1. Elementary School Sales							2. High School Sales			
	QTB	PTB	PWB	POBT	EE	XTB	QTB	PTB	PWB	POBT	HE	XTB
QTB	1.00						1.00					
PTB	0.47	1.00					−0.59	1.00				
PWB	0.70	0.91	1.00				0.01	−0.29	1.00			
POBT	0.48	0.77	0.84	1.00			0.57	−0.02	−0.13	1.00		
EE	0.67	0.33	0.47	0.24	1.00		0.87	−0.41	0.27	0.64	1.00	
XTB	0.57	−0.06	0.18	0.04	0.72	1.00	−0.44	0.82	−0.38	0.16	−0.39	1.00

Notation:

QTB = Quantity of Textbooks Sold (000 books)
PTB = Unit Price of Textbooks
PWB = Unit Price of Workbooks
POBT = Unit Price of Objective Tests
EE = Elementary School Student Enrollment (000)
HE = High School Student Enrollment (000)
XTB = Public School Expenditures of Textbooks (000$), includes both Elementary and Secondary Schools

Source: Bureau of Domestic Commerce.

Table 7.—Results From Annual Forecasts Made During the History Period, 1954-69, by Three Regression Approaches

Year	1. Differences between Forecast and Actual Textbook Sales (000 books)					
	1. Multiple Regression Equations with Original Data as Input		2. Multiple Regression Equations with Detrended Data as Input		3. Simple Regression on Time	
	School Level		School Level		School Level	
	Elementary	High	Elementary	High	Elementary	High
1954	1,377	340	3,227	−366	−245	−2,484
1955	−1,230	128	−729	348	−709	−889
1956	−2,105	206	−1,003	508	576	−113
1957	−589	288	−1,135	356	−2,056	198
1958	199	−64	258	−256	−511	561
1959	756	−757	808	−318	−1,656	1,735
1960	2,143	−129	4,312	−2,924	1,499	−446
1961	−924	704	1,523	1,421	−2,126	2,684
1962	2,901	−224	3,139	23	4,328	851
1963	−958	−454	1,093	−525	1,825	−905
1964	177	1,629	712	1,669	4,844	660
1965	−190	−2,168	70	1,684	5,050	−280
1968	−5,235	551	8,441	−695	−9,379	−2,385
1969	4,216	1,251	343	993	−2,711	517
Average error of forecast[a]	2,217	879	2,901	1,157	3,598	1,356

[a]Average error of forecast equals the square root of the sum of each squared error divided by the number in each respective distribution, fourteen.

Note: Years 1966 and 1967 omitted because in these years an unusual fluctuation in sales had originated from large one-time budget appropriations to the public schools.

Source: Bureau of Domestic Commerce.

Table 8.—Results From Annual Forecasts Made During the History Period, 1954-69, by Three Regression Approaches

Year	1. Differences between Forecast and Actual Textbook Sales in Percent[a]					
	1. Multiple Regression Equations with Original Data as Input		2. Multiple Regression Equations with Detrended Data as Input		3. Simple Regression on Time	
	School Level		School Level		School Level	
	Elementary	High	Elementary	High	Elementary	High
1954	2.5	2.1	5.9	−2.2	−0.4	−15.1
1955	−2.1	0.7	−1.2	2.0	−1.2	−5.0
1956	−3.5	1.1	−1.7	2.6	1.0	−0.6
1957	−0.9	1.3	−1.7	1.6	−3.2	0.9
1958	0.3	−0.3	0.4	−1.1	−0.8	3.6
1959	1.1	−3.0	1.1	−1.3	−2.3	6.9
1960	3.0	−0.5	6.1	−9.9	2.1	−1.5
1961	−1.2	2.4	−2.0	4.9	−2.8	9.2
1962	3.9	−0.7	4.2	0.1	5.9	2.6
1963	−1.2	−1.2	−1.4	−1.4	2.3	−2.4
1964	0.2	4.2	0.9	4.4	6.1	1.7
1965	−0.2	−5.2	0.1	−4.0	6.2	−0.7
1968	−5.4	1.2	−8.7	−1.5	−9.7	−5.2
1969	4.5	2.7	0.4	2.1	−2.9	−1.1
Average error[b]	2.7	2.4	3.6	3.6	4.2	5.6

[a]Percent of error equals the error from forecasting the amount of books sold divided by the actual number sold.
[b]Average error is equal to the square root of the sum of each squared error divided by the number in each respective distribution.

Note: Years 1966 and 1967 omitted because in these years an unusual fluctuation in sales had originated from large one-time appropriations to the public schools.

Source: Bureau of Domestic Commerce.

Table 9.—Forecast Errors, From Three Regression Approaches to Forecast Textbook Sales, in Standard Units,[a] 1970-73 History Period

Year	1. Multiple Regression Equations with Original Data as Input		2. Multiple Regression Equations with Detrended Data as Input		3. Simple Regression on Time	
	Sales to		Sales to		Sales to	
	Elementary School	High School	Elementary School	High School	Elementary School	High School
1970	−1.3	−0.9	−2.7	−0.5	−3.9	−1.1
1971	−0.2	0.9	1.4	1.6	1.4	2.0
1972	0.4	2.1	2.8	−1.4	0.2	4.9
1973	−0.9	1.6	1.2	3.1	1.8	6.5

[a]Standard Unit equals the forecast error divided by the best average error of forecast for the earlier history period, 1954-69. Elementary schools had an average error of 2.2 million books and high schools had that of 879 thousand books.

Source: Bureau of Domestic Commerce.

Table 10.—Average Annual Change in the Quantity of Elementary Textbook Sales, by Three Linear Regression Approaches

Time periods	1. Multiple Regression Original Data		2. Multiple Regression Adjusted Data		3. Simple Regression on Time	
	Average change		Average change		Average change	
	Amount[a] (000 books)	Rate[b]	Amount[a] (000 books)	Rate[b]	Amount[a] (000 books)	Rate[b]
1954-73:						
High	3,215		3,310		3,116	
Average	3,072	3.8	3,148	3.9	3,056	3.8
Low	2,929		2,986		2,996	
1954-69:						
High	3,119		2,811		2,909	
Average	2,922	4.0	2,661	3.6	2,865	3.9
Low	2,725		2,511		2,821	
1970-73:						
High	1,524		4,829		4,670	
Average	601	0.6	2,901	2.7	4,347	4.2
Low	−322		973		4,024	

[a]Average amount of change is coefficient of regression or slope of the trend line of predicted sales per approach. High is equal to this change plus the standard error of the regression coefficient, a statistic of variability about the slope. Low is the slope minus this standard error.

[b]Percent equals the average amount of change (regression coefficient) divided by the average annual number of books sold.

Source: Bureau of Domestic Commerce.

Table 11.—Average Annual Change in the Quantity of High School Textbook Sales, by Three Linear Regression Approaches

Time periods	I. Multiple Regression—Original Data		II. Multiple Regression—Adjusted Data		III. Simple Regression—on Time	
	Average change		Average change		Average change	
	Amount[a] (000 books)	Rate[b]	Amount[a] (000 books)	Rate[b]	Amount[a] (000 books)	Rate[b]
1954-73:						
High	2,322		2,335		2,443	
Average	2,210	6.4	2,249	6.5	2,429	6.9
Low	2,098		2,163		2,415	
1954-69:						
High	2,563		2,514		2,444	
Average	2,442	8.1	2,422	8.0	2,428	8.0
Low	2,321		2,330		2,412	
1970-73:						
High	206		109		2,557	
Average	−414	−0.8	30	0.1	2,298	4.4
Low	−1,034		−49		2,039	

[a]Average amount of change is the coefficient of regression of the trend line of predicted sales per approach. High is equal to this change plus the standard error of the regression coefficient, a statistic of variability about the slope. Low is the slope minus this standard error.

[b]Percent equals the average amount of change (regression coefficient) divided by the average annual number of books sold.

Source: Bureau of Domestic Commerce.

STATISTICAL SERIES

Table S-1.—U.S. Exports of Books, Periodicals, Other Printed Matter, Loose-Leaf Binders, and Printing Plates, January-June 1974

[Schedule B Nos. 6423010–6423030, 7182230, 8921110–8929100, 8929400, 8929820–8929850, 8942410]

Description and Schedule B Number	January-June 1974	Percent change from January-June 1973
Grand total	$237,653,778	+21.1
Printing plates and cuts (all processes) (7182230)	1,642,101	−8.3
Printed matter, total	236,011,677	+21.4
Manifold business forms (6423010)	788,860	+11.7
Albums and blankbooks, except business forms (6423020)	918,839	+17.8
Loose-leaf binders (6423030)	622,500	+36.4
Maps, charts, atlases, and globes (8921300)	1,774,082	+1.0
Bound periodicals and newspapers (multiple issues) (8921160)	5,482,860	+11.7
Newspapers, unbound (8922010)	944,203	+24.8
Periodicals, unbound (8922030, 8922040)	56,733,989	+20.5
Music in books and sheets (8923010, 8923020)	2,804,145	+107.3
Transfers (decalcomanias) (8924100)	3,734,128	+86.7
Picture postcards, except greeting cards (8924210)	342,963	−17.0
Greeting cards (8924220)	2,059,445	+63.9
Paper and paperboard labels and wrappers (8929100)	5,603,048	+50.3
Calendars, including calendar blocks, of paper (8929400)	576,231	+64.2
Advertising printed matter (8929820)	8,938,976	+26.8
Catalogs and directories (8929830)	2,568,823	+43.8
Business service publications (8929840)	1,384,387	−66.7
Playing cards (8942410)	3,029,129	+39.8
Printed matter, n.e.c. (8929850)	20,562,811	+41.5
Books, total	117,142,258	+18.0
Textbooks, workbooks and standardized tests (8921110)	25,296,676	+14.7
Technical, scientific, and professional books, except school textbooks (8921120)	19,120,484	+10.0
Bibles, Testaments, and other religious books (8921130)	5,795,367	+19.5
Dictionaries (8921140)	3,373,672	+119.2
Encyclopedias (8921150)	16,852,174	+17.6
Books, n.e.c. (8921170)	43,595,371	+18.7
Children's picture and painting books (8921200)	3,108,514	+29.7

Note: Data do not include individual shipments valued under $250.

n.e.c.—Not elsewhere classified.

Source: U.S. Department of Commerce, Bureau of the Census.

Table S-2.—U.S. Exports of Books, Periodicals, Other Printed Matter, Loose-Leaf Binders, and Printing Plates, January-June 1974

[Schedule B Nos. 6423010–6423030, 7182230, 8921110–8929100, 8929400, 8929820–8929850, 8942410]

Principal markets	January-June 1974	Percent change from January-June 1973	Principal markets	January-June 1974	Percent change from January-June 1973
Argentina	$1,081,607	+39.5	Japan	$110,886,358	+68.0
Australia	17,508,657	+39.1	Mexico	7,139,258	+15.9
Bahamas	814,254	+3.4	Netherlands	5,372,351	+33.1
Belgium-Luxembourg	1,601,263	+33.4	New Zealand	2,512,473	+23.9
Brazil	3,073,713	+39.7	Panama	1,427,205	+9.6
Canada	110,886,358	+15.9	Peru	1,296,324	+37.0
Chile	147,864	−23.8	Philippines	2,800,667	+83.5
Columbia	577,476	−59.3	Republic of Korea	439,088	−9.2
El Salvador	246,959	+30.5	Republic of S. Africa	3,708,721	−6.4
France	4,367,625	+48.0	Singapore	2,727,649	+64.8
Greece	430,843	−3.9	Spain	995,309	+16.2
Hong Kong	1,172,936	+52.6	Sweden	1,109,246	+33.8
India	1,231,006	+26.2	Switzerland	1,424,911	+21.0
Israel	716,657	+7.2	United Kingdom	23,387,030	+24.8
Italy	2,855,339	+29.2	Venezuela	2,700,512	−16.0
Jamaica	1,090,785	+6.5	West Germany	4,571,455	+4.4

Note: Data do not include individual valued under $250.

Source: U.S. Department of Commerce, Bureau of the Census.

Table S-3.—U.S. Imports of Books, Periodicals, Other Printed Matter, and Printing Plates, January-June 1974

[TSUSA Nos. 2565600-2566000, 2700500-2701500, 2702520-2702580, 2704500, 2705000, 2705500, 2706300, 2707000, 2708500, 2731000, 2733000, 2733500, 2736500-2743500, 2746000-2749000, 6683800, 7342500, 7375200]

Description and TSUSA number	January-June 1974	Percent change from January-June 1973
Grand total	$123,614,758	+11.9
Printing plates and cuts (all processes)(6683800)	507,316	−37.6
Printed matter, total	123,107,442	+12.3
Newspapers (2705500)	8,344,179	+31.1
Periodicals (2706300)	13,827,446	+28.8
Tourist literature about places outside the U.S. (2707000)	2,398,535	−1.4
Printed catalogs offering U.S. products (2704500, 2705000)	1,626,016	+93.5
Catalogs, price lists, and trade notices of foreign businesses (2708500)	2,009,186	−5.3
Music in books or sheets (2731000)	602,838	+37.3
Globes (2733000)	139,637	−32.3
Maps, charts and atlases (2733500)	1,446,977	+32.6
Decalcomanias in ceramic colors (2736500, 2737000)	543,671	+13.6
Other decalcomanias (2737500, 2738000)	3,036,189	+93.5
Postcards (2738500-2739500)	257,373	+29.4
Greeting cards and social and gift cards, with words (2740500)	1,507,868	+1.9
Other greeting cards and social and gift cards (2740000)	102,699	+13.4
Calendars of paper (2741000-2742000)	429,380	+16.9
Labels, flaps, and bands (2742300-2743500)	603,418	+15.0
Pictorial matter, lithographed, n.s.p.f.(2746000, 2746500)	4,260,311	+139.9
Photographs, exposed film, and other pictorial printed matter, n.s.p.f. (2747000)	3,099,773	−8.2
Playing cards (7342500)	918,760	+0.4
Diaries, notebooks, and address books (2565600)	2,635,056	+32.4
Other blankbooks (2565800)	103,173	−50.5
Albums (autograph, photograph, record, stamp)(2566000)	4,503,650	−22.6
Printed matter, n.s.p.f., suitable for use in book production (2747300)	844,554	−15.5
Other printed matter (2700500-2701500, 2747500-2749000)	6,053,768	−9.1
Books, total	63,812,985	+6.4
Bibles and prayer books (2702520)	1,817,861	−26.4
Books, foreign language (2702540)	6,889,849	+3.5
Other books, n.s.p.f., wholly or in part the work of an author who is a U.S. national or domiciliary (2702560)	1,493,004	+49.3
Other books (2702580)	52,380,338	+7.4
Toy books and coloring books (7375200)	1,231,933	+12.7

Note: Data exclude certain low-value shipments.
n.s.p.f.-Not specially provided for.
Source: U.S. Department of Commerce, Bureau of the Census.

Table S-4.—U.S. Imports of Books, Periodicals, Other Printed Matter, and Printing Plates, January-June 1974

[TSUSA Nos. 2565600-2566000, 2700500-2701500, 2702520-2702580, 2704500, 2705000, 2705500 2706300, 2707000-2708500, 2731000, 2733000, 2733500, 2736500-2743500, 2746000-2749000, 6683800, 7342500, 7375200]

Principal suppliers	January-June 1974	Percent change from January-June 1973	Principal suppliers	January-June 1974	Percent change from January-June 1973
Australia	$179,180	−25.7	Italy	$8,847,637	+37.0
Austria	283,654	+1.2	Japan	12,623,111	−14.9
Belgium-Luxembourg	1,345,585	+44.5	Mexico	4,577,756	+32.0
Canada	25,572,796	+35.1	Netherlands	6,266,906	−4.0
Czechoslovakia	173,381	−37.8	Spain	6,327,521	+87.5
Denmark	424,767	−23.8	Sweden	828,946	+29.2
France	3,823,575	+1.8	Switzerland	2,265,974	−3.3
Hong Kong	3,221,470	+0.4	United Kingdom	31,583,010	−0.2
Ireland	222,823	−8.3	Venezuela	181,535	−51.0
Israel	1,448,727	+47.4	West Germany	5,968,161	−16.3

Note: Data do not include individual shipments valued under $250.

Source: U.S. Department of Commerce, Bureau of the Census.

Table S-5.—Selected U.S. Statistics: Printing Publishing, and Allied Industries, Annual Average, 1972 and 1973-74 by Quarters

Economic indicators	First quarter		Second quarter		Third quarter		Fourth quarter		Annual average
	1974	1973	1974	1973	1974	1973	1974	1973	1972
NATIONAL INCOME AND PRODUCT[a]									
National income ..... bil. $..	1,118.8	1,027.6	1,130.2	1,051,2		1,077.3		1,106.3	946.5
Compensation of employees..... do..	823.8	759.1	848.3	776.6		793.3		814.8	707.1
Wages and salaries ..... do..	727.6	667.6	744.6	683.6		698.2		717.0	626.8
Supplements to wages, salaries ..... do..	101.2	91.5	103.7	93.1		95.1		97.7	80.3
Personal income..... do..	1,112.5	1,013.6	1,134.6	1,039.2		1,068.0		1,099.3	944.9
Disposable personal income ..... do..	950.6	869.5	966.5	892.1		913.9		939.4	802.5
Personal consumption ..... do..	840.6	781.7	869.1	799.0		816.3		823.9	729.0
Gross national products..... do..	1,358.8	1,248.9	1,383.8	1,277.9		1,308.9		1,344.0	1,158.0
Manufacturers' new plant and equipment exp. ..... do..	42.96	35.51	45.32	36.58		38.81		40.61	31.27
PURCHASING POWER OF THE DOLLAR[a]									
As measured by:									
Wholesale prices .....1967 = $1.00..	.671	.855	.647	.846		.834		.825	.840
Consumer prices ..... do..	.711	.809	.687	.802		.795		.788	.799
INDUSTRIAL PRODUCTION INDEX (FRB)[b]									
All manufacturing ..... 1967 = 100..	124.1	121.8	127.5	126.5		125.5		126.8	114.0
PRINTING AND PUBLISHING INDUSTRIES (SIC 27)									
Production index (FRB)[b]..... 1967 = 100..	103.8	105.5	113.1	112.8		121.3		113.1	107.9
Corporate sales[c] ..... mil. $..	8,772	7,439	8,462	7,998		7,249		7,746	7,162
Corporate net profits:[c]									
Before taxes ..... do..	643	555	819	666		657		791	625
After taxes..... do..	359	302	450	358		354		441	334
Percent of sales.....	4.1	4.1	5.3	4.5		4.9		5.7	4.7
All employees..... thous..	1,105.3	1,093.6	1,105.6	1,095.8		1,077.6		1,092.8	1,079.6
Production workers..... do..	665.0	660.6	663.1	661.8		654.0		663.6	656.9
Average weekly earnings ..... $..	179.75	172.37	183.44	176.46		172.42		174.29	169.79
Average hourly earnings ..... $..	4.82	4.58	3.90	4.66	n.a.	4.51	n.a.	4.57	4.48
Average weekly hours.....	3.74	37.6	37.4	37.9		38.2		38.2	37.9
NEWSPAPERS (SIC 271)									
Advertising (64 cities)[d] ..... mil. $..	897.1	869.2	981.0	999.2		837.5		979.2	*3,496.5
All employees ..... thous..	380.7	380.7	379.1	382.4		376.6		382.2	376.5
Production workers..... do..	176.8	181.3	172.9	181.6		181.0		183.0	181.4
Average weekly earnings ..... $..	182.89	176.30	188.64	183.26		177.96		181.90	175.37
Average hourly earnings ..... $..	5.33	5.01	5.41	5.13		4.98		5.04	4.94
Average weekly hours.....	34.3	35.2	34.7	35.7		35.7		36.1	35.5
PERIODICALS (SIC 272)									
Advertising cost, total[e]..... mil. $..	290.2	271.9	363.5	363.2		278.9		386.2	*1,210.6
All employees.....thous..	60.1	68.4	69.8	68.0		67.8		68.8	68.1
Production workers..... do..	20.4	20.7	19.8	20.2		20.3		20.9	20.6
Average weekly earnings..... $..	208.96	195.62	206.36	202.57		197.32		194.43	191,09
Average hourly earnings ..... $..	5.28	4.91	5.30	5.04		4.82		4.84	4.73
Average weekly hours.....	39.7	39.9	38.9	40.2		41.0		40.2	40.4
BOOKS (SIC 273)									
All employees..... thous..	105.7	99.9	108.1	100.8		98.2		98.5	99.1
Production workers..... do..	58.5	55.2	60.4	55.2		51.6		54.2	55.4
Average weekly earnings..... $..	159.30	157.03	164.72	161.02		159.87		158.74	155.63
Average hourly earnings ..... $..	4.12	4.03	4.22	4.08		4.01		4.06	3.95
Average weekly hours.....	38.6	39.0	39.0	39.4		39.9		39.1	39.4
COMMERCIAL PRINTING (SIC 275)									
All employees..... thous..	381.2	347.0	348.4	346.8		342.1		348.4	344.2
Production workers..... do..	266.2	264.5	266.7	264.6		260.7		266.2	262.8
Average weekly earnings..... $..	185.09	177.44	187.79	179.98		144.43		177.86	174.15
Average hourly earnings ..... $..	4.84	4.60	4.92	4.67		4.55		4.56	4.50
Average weekly hours.....	38.3	38.5	38.2	38.6		39.1		39.0	38.7

See footnotes at end of table.

Table S-5.—Selected U.S. Statistics: Printing, Publishing, and Allied Industries, Annual Average, 1972 and 1973-74 by Quarters—Con.

Economic indicators	First quarter		Second quarter		Third quarter		Fourth quarter		Annual averages
	1974	1973	1974	1973	1974	1973	1974	1973	1972
COMM. PRTG., EXC. LITHO. (SIC 2751)									
All employees ..... thous..	201.8	202.6	202.3	202.1		201.8		304.6	202.1
Production workers ..... do..	157.7	165.5	157.7	156.5		156.8		160.3	156.7
Average weekly earnings ..... $..	175.84	169.79	179.76	172.18		176.09		175.10	166.71
Average hourly earnings ..... $..	4.64	4.44	4.75	4.50		4.55		4.56	4.33
Average weekly hours	38.9	38.3	37.9	38.2		38.7		38.4	38.5
COMM PRTG., LITHO. (SIC 2752)									
All employees ..... thous..	134.1	133.3	134.1	133.6		133.3		134.7	131.3
Production workers ..... do..	99.9	99.7	100.5	99.8		99.2		100.7	98.1
Average weekly earnings ..... $..	198.80	189.18	199.58	191.01		197.93		200.13	185.25
Average hourly earnings ..... $..	5.12	4.83	5.20	4.89		5.02		5.07	4.75
Average weekly hours	38.8	39.2	38.4	39.0		39.4		39.5	39.0
BOOKBINDING AND RELATED INDUSTRIES (SIC 278)									
All employees ..... thous..	56.3	56.4	55.7	53.8		57.1		56.4	55.4
Production workers ..... do..	46.8	47.1	46.6	47.8		47.6		47.1	46.1
Average weekly earnings ..... $..	137.93	131.35	140.73	132.98		134.59		138.31	127.92
Average hourly earnings ..... $..	3.62	3.45	3.70	3.49		3.52		3.58	3.34
Average weekly hours	38.0	38.0	38.0	38.1		38.3		38.6	38.3
OTHER PRINTING AND PUBLISHING INDUSTRIES (SIC 274, 6, 7, 9)									
All employees ..... thous..	145.0	139.3	144.5	140.4		142.6		146.0	136.3
Production workers ..... do..	96.3	91.8	96.9	92.4		94.2		97.7	90.6
Average weekly earnings ..... $..	187.98	176.64	189.23	178.56		180.68		186.66	168.46
Average hourly earnings ..... $..	4.85	4.60	4.92	4.65		4.68		4.73	4.41
Average weekly hours	38.7	38.4	38.5	38.4		38.6		39.4	38.2
PAPER PRODUCTION, CONSUMPTION, INVENTORY AND PRICES					n.a.		n.a.		
Newsprint:									
Used by publisher[f] ..... thous. tons..	1,727	1,866	1,830	2,026		1,838		1,927	*7,569
Publishers' inventory[f] ..... do..	694	604	718	650		635		600	544
Price, rolls, contract (BLS) ..... $..	187.91	166.05	205.80	168.58		169.70		177.42	163.20
PAPER									
Production:[g]									
Groundwood, uncoated:									
Publication and printing ..... short tons..	350,717	313,631	349,412	324,188		320,356		363,170	*1,193.1
Coated, printing and converting:									
Coated, one side ..... do..	141,567	112,257	144,070	124,999		108,143		111,703	*423.1
Coated, two sides ..... do..	863,345	843,411	879,785	879,400		821,213		855,450	*2,840.2
Book, uncoated:									
Publication and printing ..... do..	524,373	498,770	512,544	504,436		496,510		510,135	*1,853.2
Writing:									
Chemical wood pulp ..... do..	844,015	724,291	862,171	771,031		769,960		826,263	*2,686.4
Wholesale price index (BLS):									
Book paper, A grade ..... 1967 = 100..	119.0	110.1	134.7	111.9		112.4		115.3	112.4
Book paper, No. 3 plain, offset ..... do..	129;1	119.1	145.1	121.3		121.7		121.7	118.5
Wood bond ..... do..	127.8	123.8	135.6	124.7		124.6		126.9	121.8

Note: Employment and earnings data from Department of Labor, Bureau of Labor Statistics (BLS). Data for most recent quarter are preliminary. FRB-Federal Reserve Board. [r]Revised. [p]Preliminary. n.a.—Not available. *Cumulative. [a]*Survey of Current Business, Office of Business Economics.* Quarterly data are seasonally adjusted at annual rates. [b]Without seasonal adjustment. [c]*Quarterly Financial Report,* Federal Trade Commission and Securities and Exchange Commission. [d]Media Records, Inc. Data are three months totals. [e]Publishers' Information Bureau, Inc. Data are three months totals. [f]American Newspaper Publishers' Assn.; approximately 75% of total newsprint used. Consumption data are three months total. [g]Bureau of the Census. Data are three months totals. Exports generally equal imports, production usually equivalent to consumption.

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